

*A Rash Overview of Tropical Skin
Diseases
(and other things)*

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DISCLOSURE OF CONFLICTS OF INTEREST

Boris D. Lushniak, MD, MPH

- I do not have any relevant financial relationships with any commercial interests
- No off-label discussion of drugs or devices
- Work supported by US Government (DHHS, USPHS, OASH/OSG, FDA, CDC/NIOSH)

Overview

- Historical context of skin diseases
- The dermatologic evaluation and lexicon
- Common conditions in global dermatology
- Mycoses (superficial and deep)
- Genital ulcer diseases / Treponemal infections
- Infestations and ectoparasites
- A potpourri of interesting diseases (as time allows)

Purpose

- To introduce you to / review the lexicon
 - Talk the talk
- To describe the spectrum of global skin diseases
 - Common skin diseases
 - Tropical skin diseases

Rash

- Middle English *rasche* – *active*
- Old French *rache* – *to scratch*
- A skin eruption
- An outbreak of certain activities or incidents within a brief period
- Quick in producing an effect
- Marked by ill-considered boldness or haste

Dermatology in US Military History

Military Perspective WW I

- Diseases of the skin...though ordinarily considered to be of minor importance...are of great importance to an army operating in the field, by reason of the noneffectiveness they cause.

AN Tasker

US Army, Office of the Surgeon General

1928

Military Perspective WW II

- Skin diseases are of greater importance in military service...they result in a considerable loss of effective manpower and partial incapacity of a material number of the personnel of many commands.

MAJ GEN James C. Magee
1942

Military Perspective Viet Nam

- Historically, diseases of the skin have not been accorded the concern they deserve. This fact may result from the low mortality...The high morbidity rates and the noneffectiveness rates, however, demand critical attention to the skin...

Brig Gen (ret) Andre J. Ognibene
Medical Corps, US Army 1977

Military Perspective

- Skin diseases such as infections, infestations, and immersion foot may devastate the fighting strength of a unit by incapacitating its soldiers...It is important to keep in mind that incapacity due to skin disease is usually preventable.

LT GEN Alcide M. LaNoue

The Surgeon General, US Army 1994

Dermatologic Evaluation

- History
- Subjective symptoms
- Clinical signs
 - Physical examination of the skin
- Laboratory examinations
 - Scrapings
 - Culture
 - Biopsy

Examination

- Well lit room or in natural sunlight
- Magnification
- Palpation (protect yourself)
- Wide angle to close up approach
 - Issues of undressing
- Teledermatology

The Lexicon Dermatological Terms

Diagnostic Details

- Distribution
- Evolution
- Involution
- Grouping
- Color
- Consistency
- Configuration

Configuration

- Linear
- Annular (complete circle)
- Arcuate (portion of circle)
- Polycyclic (intersecting circles)
- Serpiginous (snaking)
- Guttate (small drops)
- Nummular (coin-shaped)

Cutaneous Symptoms

- Pruritus / pruritic – itching
- Burning
- Tingling
- Prickling
- Pain
- Numbness

Cutaneous Signs

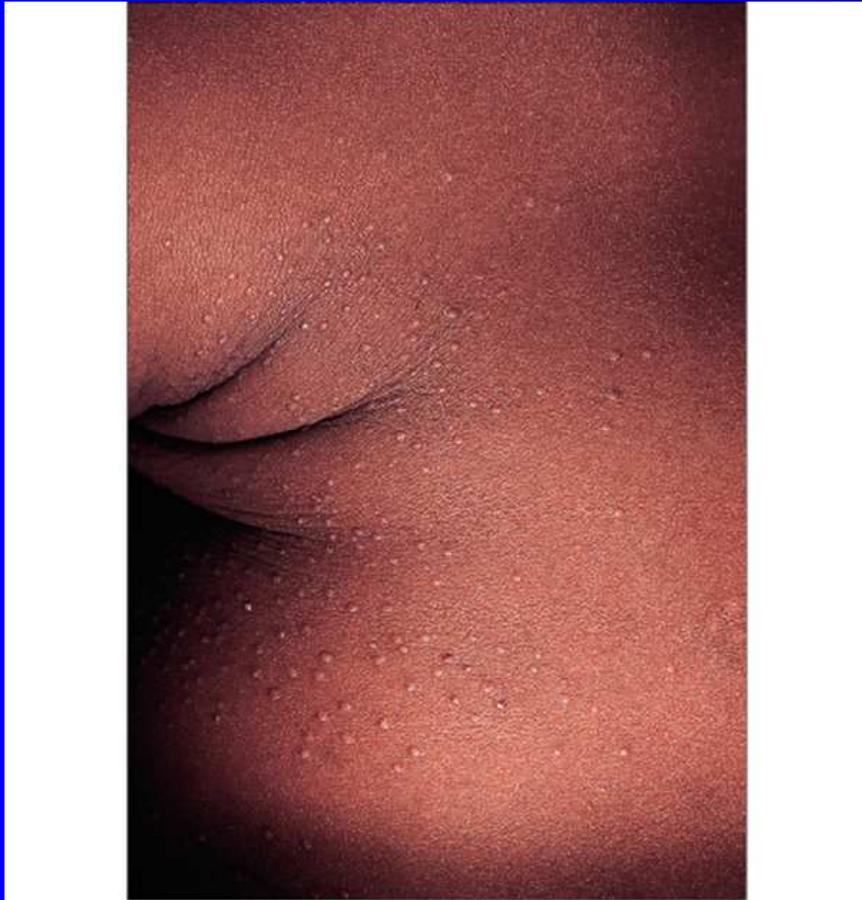
- Primary lesions – original lesions
- Secondary lesions – modified by regression, trauma (scratching), extraneous factors

Macules / Macular



- Nonpalpable changes in skin color
- Circular, oval, irregular, distinct or fade in
- Patch $>$ 1 cm

Papules / Papular



- Circumscribed solid elevations with no visible fluid
- Rounded, conical, flat-topped, umbilicated, capped by scales (squamous papules)

Plaque

- Broad papule or confluence of papules > 1 cm



Nodules

- Morphologically similar to papule > 1 cm, deep



Tumors

- Soft or firm, freely movable or fixed masses of various sizes and shapes (usually > 2 cm)



Wheals / Hives

- Evanescent, edematous, plateaulike elevations



Vesicles / Bullae

- Circumscribed, fluid-containing epidermal elevations
- Bullae > 1 cm



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Pustules

- Small elevations containing purulent material



Secondary Lesions

- Scales (exfoliation)
- Crusts (scabs)
- Excoriations and abrasions (scratch marks)
- Fissures (cracks, clefts)
- Erosions (loss of epidermis) Scars
- Scars
- Ulcers (excavations)

Ulcers



Some Common Conditions in Global Dermatology

- Dermatitis and eczema
- Pyoderma (bacterial infections)
- Pigmentary disorders
- Other common disorders (psoriasis, warts, miliaria, insect bites)

Dermatitis



Sunburn and Photodermatoses

- Phototoxic --
furocoumarins (limes),
coal tars, drugs
(antimicrobials,
antimalarials)
- Photoallergic --
fragrances,
sunscreens, plants



Eczema (atopic dermatitis)

9yo Afghan girl with itchy red skin



Pyoderma



- Most common -- impetigo, furunculosis
- *Staph aureus* and Group A (Beta-hemolytic) strep

*Staphylococcal wound
infection*



Ecthyma gangrenosum

(*p. aeruginosa*)



Folliculitis



Pigmentary Disorders -- Vitiligo



Psoriasis

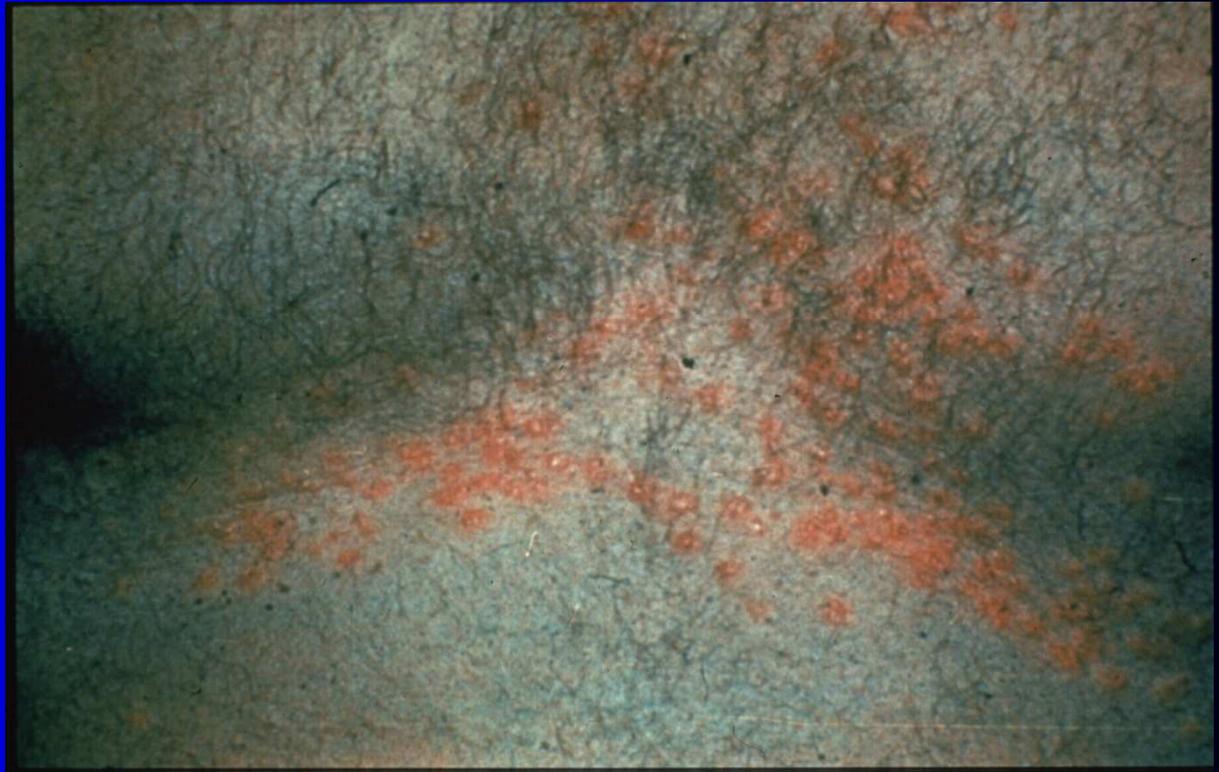


Verruca (Warts)



Miliaria (prickly heat, heat rash)

- Blockage of sweat ducts
- Hot, humid environments



Insect bites



Bedbugs



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Mycoses

Superficial mycoses (surface to surface)

Tinea (Pityriasis) versicolor

Candidiasis

Dermatophytosis (true tinea/ringworm)



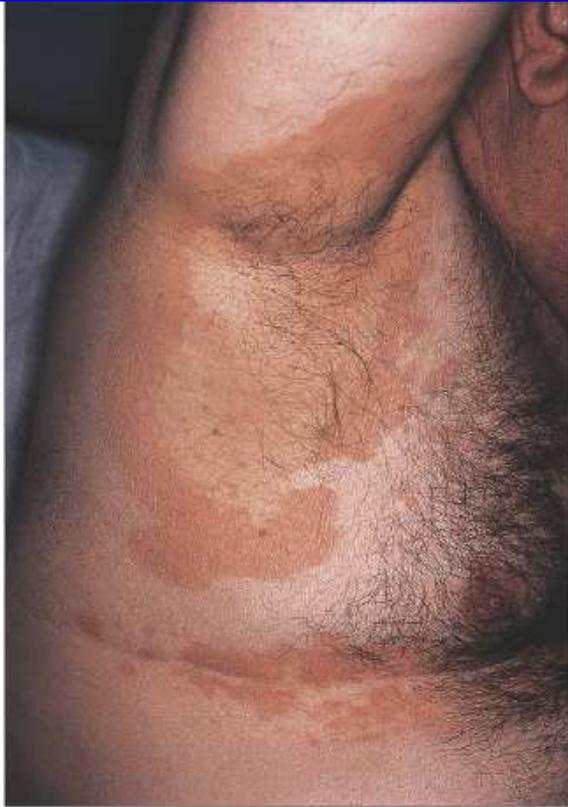
Subcutaneous mycoses (penetration)

Sporotrichosis, Phaeohyphomycosis,
Chromoblastomycosis

Systemic mycoses (inhalation)

Histoplasmosis, coccidioidomycosis, and others

Tinea versicolor



- Asymptomatic hypo- or hyperpigmented slightly scaly patches
- Chest, neck, back

Tinea versicolor

- White
- Brown
- Red ...

- *Malassezia furfur* (or *Pityrosporum ovale*) is not truly “tinea”
- Feeds on lipid, not keratin

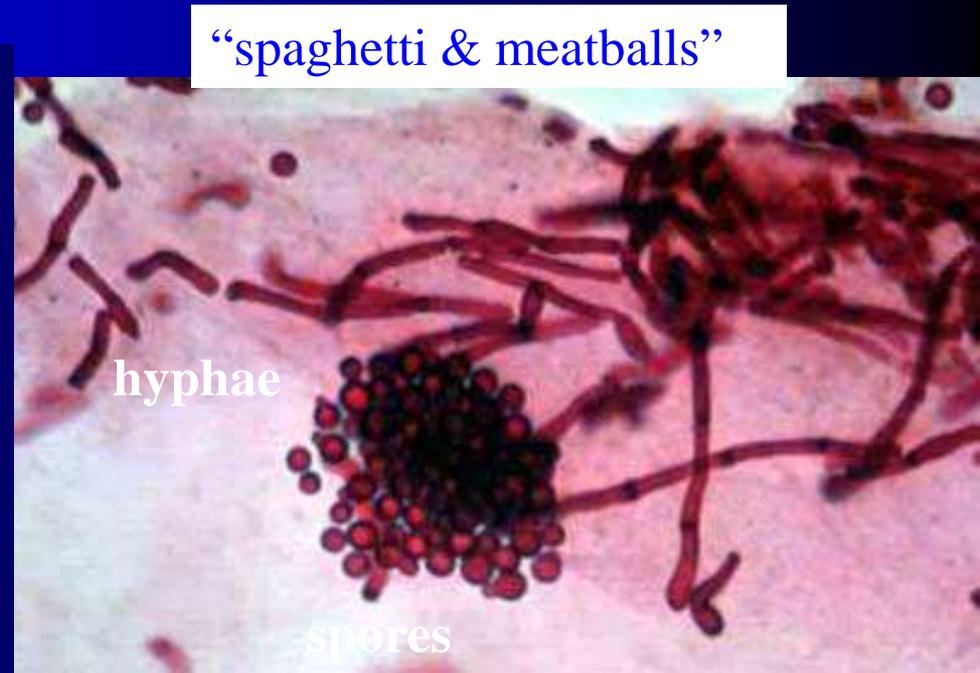


Can you appreciate the scale?



Tinea (Pityriasis) versicolor

- Treatment- topical azole, oral ketoconazole (take 1 pill, sweat, then wait to shower)
- Most recur

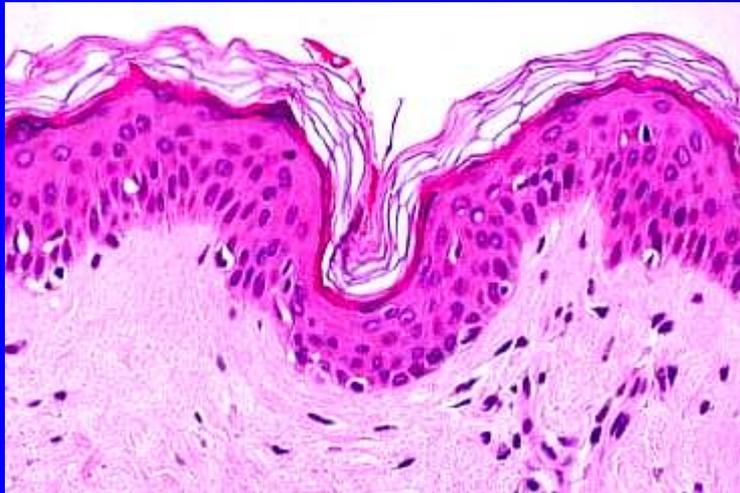


Candidiasis



Dermatophytes

- Three closely related genera subsist on keratin in stratum corneum
- Microsporum
- Trichophyton
- Epidermophyton



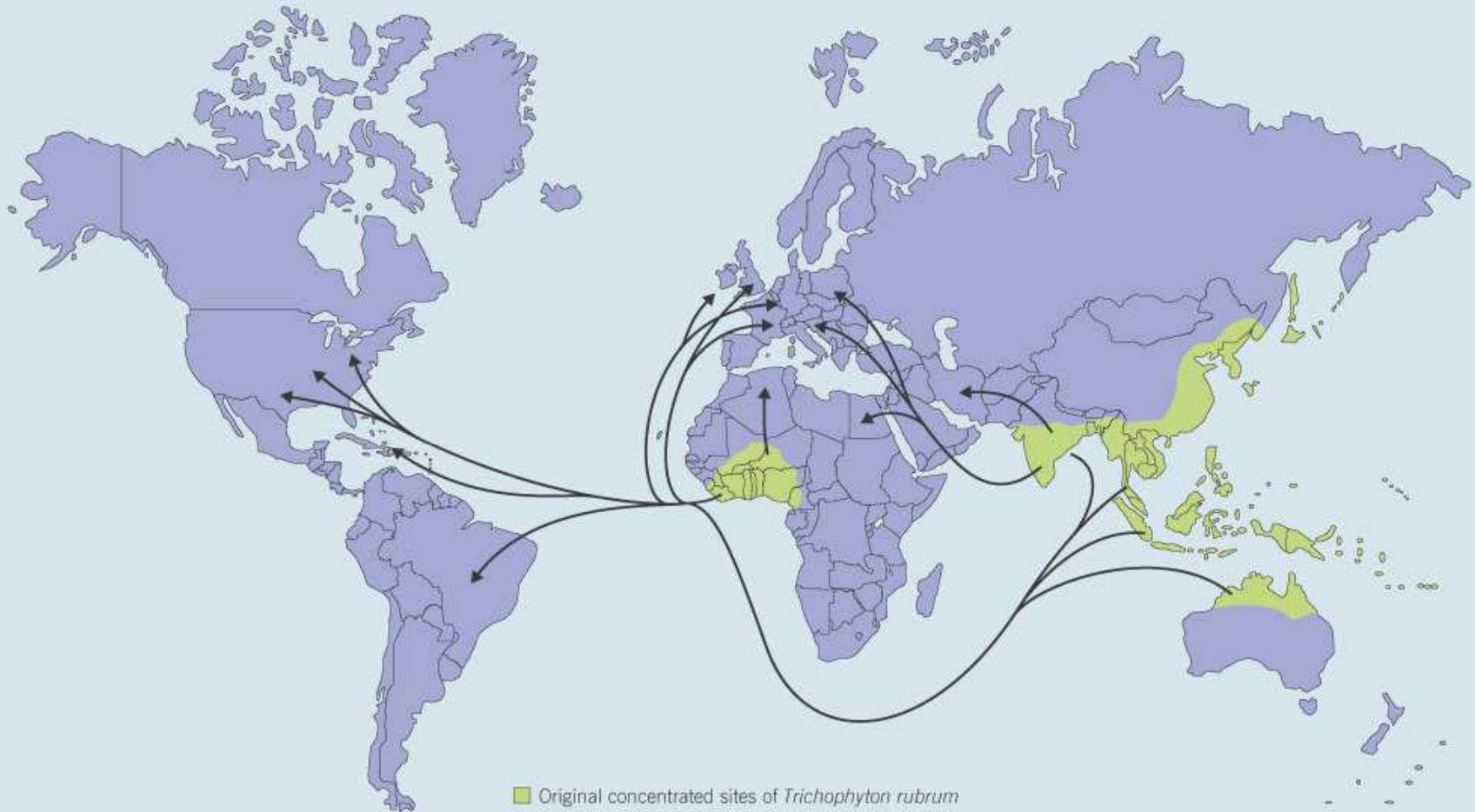
- Tinea x
- Tinea corporis
- Tinea capitis
- Tinea cruris
- Tinea manuum
- Tinea pedis
- Tinea unguium
- Tinea faciei
- Tinea barbae

Source Anthropophilic

Geophilic

Zoophilic

MIGRATION OF *TRICHOPHYTON RUBRUM*



Tinea (dermatophyte) infections

- Clinically:
 - Central clearing
 - Elevated borders
 - Any part of body
 - Round, red, scaling
 - Central clearing
 - Can be polycyclic
- Treat with topical antifungals



Tinea corporis (Common ringworm)

Annular scaly itchy plaques

Varying degrees of redness

Scale at margin

Trichophyton rubrum



Microsporum canis



Tinea Cruris: Clues to diagnosis



Symmetric half-rings on medial inner thighs

Spares scrotum (less keratin)

Scale at margin

KOH and culture cinch the diagnosis

Prevention: “Hang loose”

Treatment: topical antifungal

Tinea pedis (Inflammatory)

Inflammatory in the web-spaces

Burning, itching

Sometimes polymicrobial

Exacerbated in humid tropics

Uncommon in barefoot populations



Tinea pedis

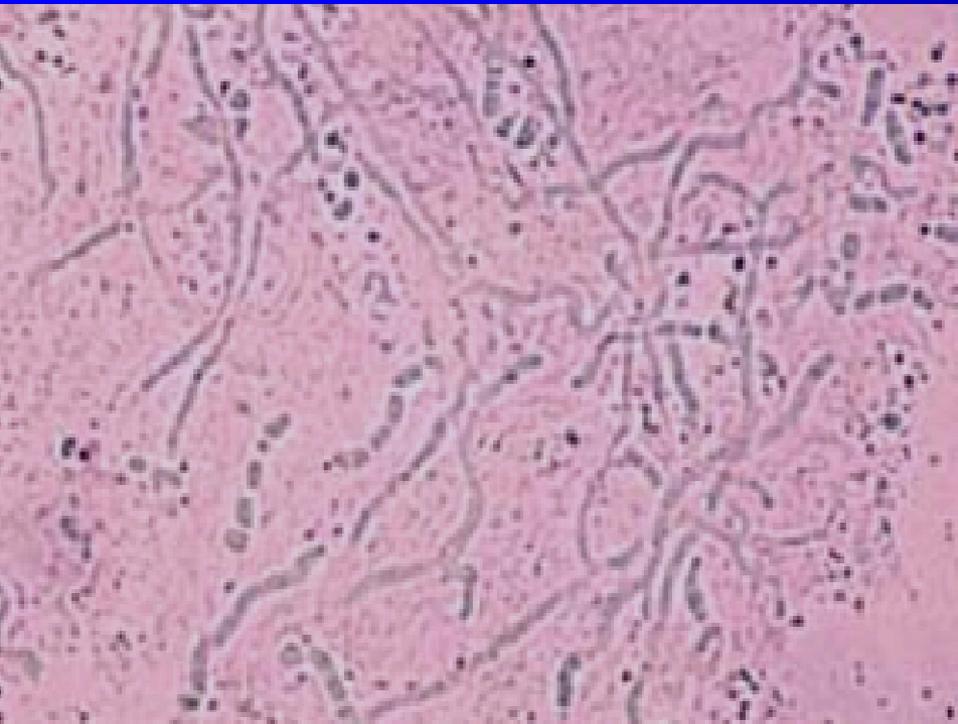


- Scaling +/- erythema
- Occasionally blisters
- Treat with Lamisil (Terbinafine) or Clotrimazole for 4-6 weeks
- Antifungal powders (Zeasorb AF or Tolnaftate)



Diagnosis: KOH, culture

Skin scraping with potassium hydroxide (KOH) shows fungal hyphae



Culture with Sabouraud's agar

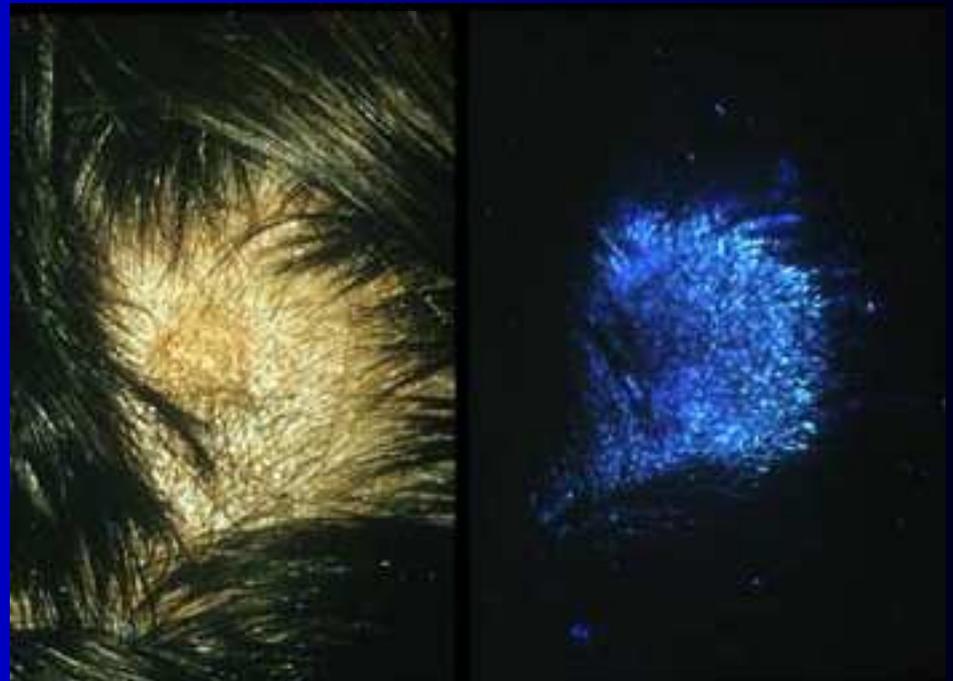


Examined with lactophenol cotton blue

Diagnosis: DTM, fluorescence

Dermatophytes will turn DTM (Dermatophyte Test Medium) from orange to red

Several fungi will fluoresce under ultraviolet light (Wood's lamp)



Allylamines

- Terbinafine, naftifine, etc.
- Fungicidal (inhibit fungal cell wall formation)
- Best coverage for dermatophytes, marginal coverage for yeast
- Come in cream, spray, and powder
- Usually cream BID continued until one week after clinical clearance
- Powder can be excellent prevention measure for patients with recurrent tinea pedis or cruris (usually related to underlying hyperhidrosis)

Azoles

- Clotrimazole, miconazole, etc.
- Fungistatic (inhibit fungal cell membrane formation)
- Cover both dermatophyte and yeast decently

Polyenes

- Nystatin
- Fungicidal (binds candida cell membranes)
- Excellent coverage for candida, does not kill dermatophytes
- Cream for drier, irritated skin such as diaper dermatitis
- Powder for macerated skin such as intertrigo between skin folds

Gentian Violet

- Very messy; stains
- Traditional “anti-infective” treatment, rarely used in USA today
- Gentian violet can be painted onto bacterial or fungal infections and left to dry

Onychomycosis

- Several different clinical presentations based on fungal entry point into the nail unit
- Proximal subungual pattern should prompt HIV test



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Treatment of Onychomycosis

Terbinafine (Lamisil): 250mg po qd x 90 days

Itraconzaole (Sporonox) 200mg bid for

1 week q month x 4 months

Treatment is largely cosmetic and optional

Non-dermatophyte

Scytalidium, Scopulariopsis, Fusarium



Fungus-free nails are a bare necessity.

Gorgeous feet have gorgeous nails. Healthy. Clean. Perfect.

But if you've noticed your nails are turning colors (like white or yellow or brown) and they're getting thick or brittle or flaky, you've probably got what millions of people have: fungus-ridden nails.

So go for effective help from the inside out with oral Lamisil Tablets. Oral Lamisil works by attacking the fungus right where it lives: deep inside, under the nail at the base.

After taking oral Lamisil for 12 weeks, clearer, healthier toenails often grow in for many people. Because nails naturally grow slowly, it takes about 10 months for you to see totally new nails.

Prescription Lamisil may have some side effects for some people. In clinical studies, the most common's reported were headache and gastrointestinal upset. In rare instances, adverse effects on the liver and serious skin reactions were reported, and therapy was discontinued. However, Lamisil is well tolerated by most people.

Call now to get your free, informative video, "Uncovering the Inside Story on Nail Fungus," plus a brochure on nail care and treatments.

1800 959-1721

Lamisil Tablets
(terbinafine HCl tablets) 250mg

The ultimate pedicure happens from the inside out

Please see patient information on the adjacent page. ©2001 Hoechst



What do you think?



Tinea capitis: dandruff-like

Posterior cervical adenopathy

Scaly scalp

Patchy hair loss

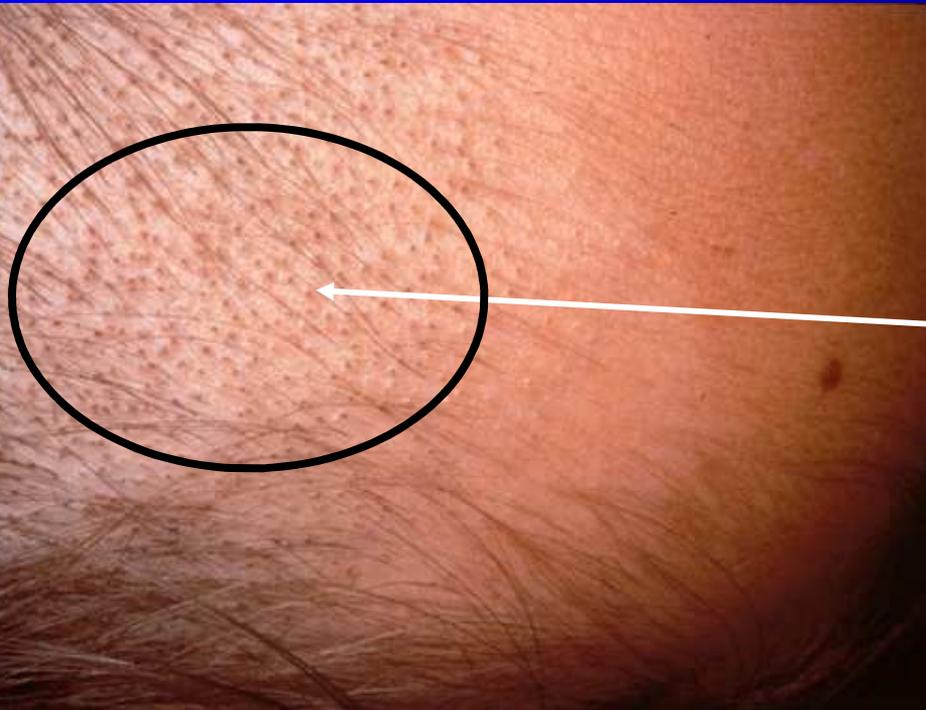


Tinea capitis: black-dot ringworm

Non-inflammatory. Hairs break off at skin surface.

Commonly due to *Trichophyton tonsurans*

Sometimes fluorescing *Microsporum audouinii*



Hairs broken off at surface produce black dots.

No erythema

Tinea capitis: Kerion



Intensely inflamed boggy nodule
A robust immunologic response,
often to few organisms.

May resemble bacterial abscess and
be colonized.

Kerions often cause scarring
(irreversible) alopecia.

Kerion

- *Microsporum canis*
- Oral antifungals and systemic steroids



T. capitis Treatment

- Oral antifungal agents
 - griseofulvin
 - newer azoles (eg, fluconazole)
 - terbinafine (Lamisil)
- Topicals alone are ineffective
 - Nystatin has no effect
 - Selsun or Nizoral shampoo may help



Many deep fungal infections can present as leg ulcers

- Sporotrichosis
- Blastomycosis
- Coccidioidomycosis
- Cryptococcosis
- Histoplasmosis
- Protothecosis
- Chromoblastomycosis



protothecosis

Chromoblastomycosis

Usually one lower extremity

Male Farmers

Fonsecaea pedrosoi



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Chromoblastomycosis

- Treatment is difficult
- Small lesions: surgical excision or LN2
- Itraconazole or Terbinafine



Below: fungal elements found in smear taken from ulcer



Lobomycosis (*Lacazia loboi*)

Acquired from soil,
water, vegetation in
forested areas

Recurrence common

Amazonian wetlands

Small lesions- surgical
excision

Itraconazole &
Clofazimine



Sporotrichosis

- Nodules with lymphatic spread and ulceration
- *Sporothrix schenckii*
- Worldwide
- Itraconazole
- Potassium Iodide



Differential for sporotrichoid spread aka Lymphocutaneous syndrome

Sporotrichosis

Nocardiosis

Leishmaniasis

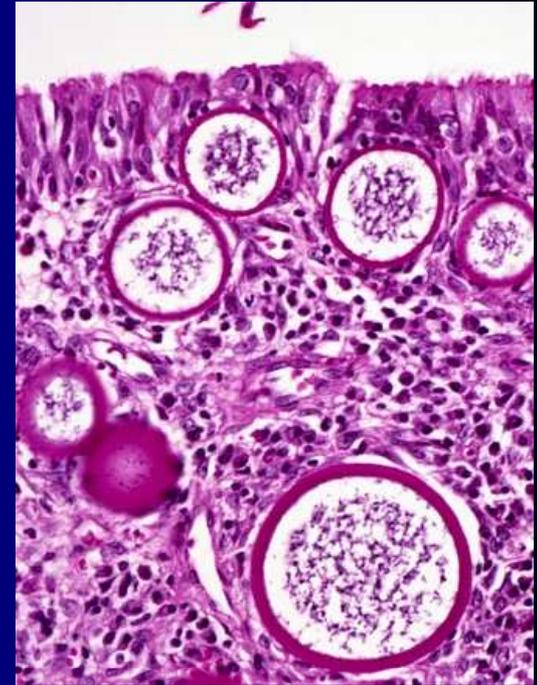
Tularemia

Atypical mycobacteria (esp *M. marinum*)



Rhinosporidiosis

- *Rhinosporidium seeberi*
- India, East Asia, Latin America
- Mucosal polypoid lesions
- Bleed easily



Rhinosporidiosis Treatment

- Destruction of involved area by excision or electrocautery
- Antifungals are of little value



Basidiobolomycosis

- Entomophthoromycosis
- Indonesia, worldwide
- Indolent course
- *Basidiobolus ranarum*
- Subcutaneous



Basidiobolomycosis

- Biopsy diagnosis- broad, thin-walled hyphae, aseptate, branched at right angles
- Potassium iodide drug of choice, other Antifungals



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Humanitarian mission in Darfur.

- Several men have similar appearing painless swollen feet



Mycetoma (“fungal tumor”)

- Madura foot, maduramycosis.
 - Sites of minor trauma and exposure to decaying wood.
 - Foot/leg (75%), upper back
 - Clinical triad of :
 - Tumefaction, Draining sinuses, & Extruded grains
- Etiology and treatment
- True fungal vs bacterial



Mycetoma

- Progressive swelling with sinus tracts and grains
- Culture and Biopsy
- Actinomycetoma: PCN, sulfonamides
- Eumycetoma: Combo surgery and Antifungal therapy



Genital Ulcer Disease (GUD)

- Causes: Syphilis, herpes, chancroid, lymphgranuloma verereum, granuloma inguinale
- USA: Genital Herpes > Syphilis
- Africa, Asia: Chancroid

Syphilis

- *Treponema pallidum*
- “The Great Pox” to distinguish from smallpox
- Clinically develops through several stages
 - Primary – chancre
 - Secondary – rash
 - Latent
 - Tertiary
 - Cardiovascular
 - Neurosyphilis
 - Gummas

Syphilis - Primary



Primary syphilitic chancre

Single lesion + bilateral inguinal adenopathy

Heals spontaneously without treatment

RPR usually becomes positive several weeks after chancre arises...check the RPR, but may need to biopsy or treat preemptively

Treating primary syphilis:

Benzathine penicillin is drug of choice

Tetracycline or doxycycline in PCN allergic patients

Test for HIV and other STD's



24yo woman with asymptomatic scaly brown circles on face.



- Malaise, sore throat, adenopathy, low grade fevers

Secondary Syphilis

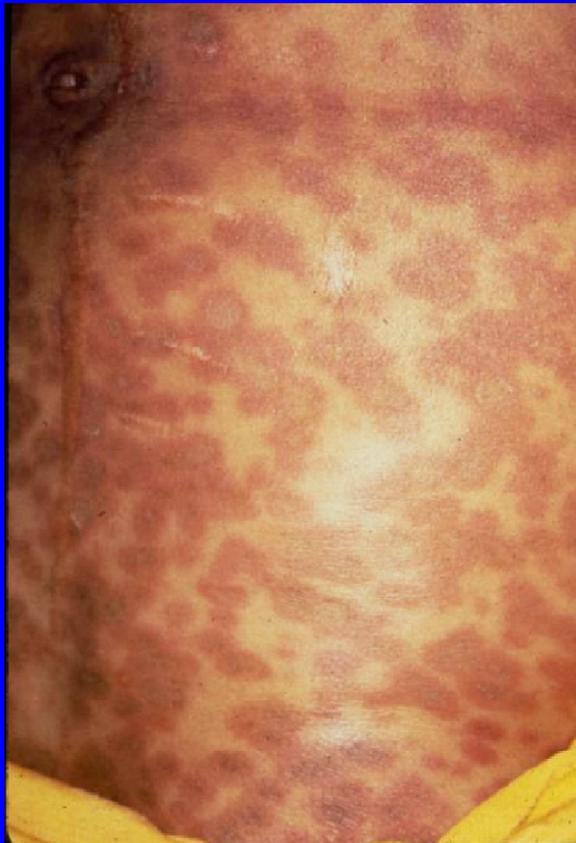


Secondary Syphilis

- Syphilids within 6-8 weeks of chancre
- Pink, erythematous, brown, coppery macules, papules...

with or without
scale...

“great imitator”



Secondary Syphilis



- Face, trunk, & extremities, palms, soles, mucosa
- Coppery / the color of “cut ham”



Secondary Syphilis

- Condyloma lata: broad, flat papules with grey, moist, weeping surface in intertriginous areas
- Mucous patches: 5 mm flat, greyish, round erosions covered by a delicate membrane on oral/genital mucosa



CONDYLOMA LATA



MUCOUS PATCHES

Patchy “moth eaten” or diffuse alopecia Syphilis



Chancroid



- *Hemophilus ducreyi*
- Multiple, inflamed, soft ulcers within a week after sexual encounter

Chancroid



Suppurative buboes

Culture ulcer and treat with azithromycin

Chancroid Treatment

Azithromycin 1 g orally, single dose

Ceftriaxone 250 mg IM, single dose

Ciprofloxacin 500 mg po BID x 3 d*

Erythromycin base 500 mg po TID x 7 d

*Contraindicated in pregnancy and lactation



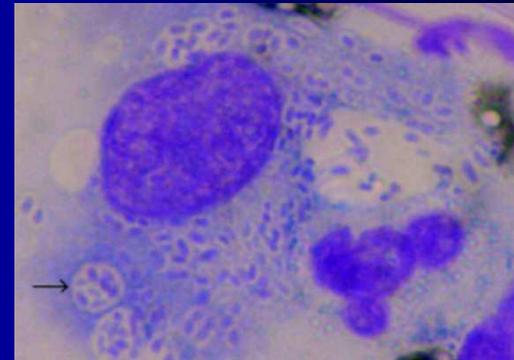
Granuloma Inguinale

- *Klebsiella granulomatis*
- Chronic, granulomatous, painless nodules
- Donovanosis
- Beefy-red



Granuloma Inguinale: Manifestations

- Incubation: 50 days
- Firm papule or nodule →ulcer
 - Ulcerogranulomatous: red, non-tender, bleeds readily
 - Verrucous, necrotic, cicatricial
- Genital: 90%; inguinal: 10%
- Diagnosis:
 - Donovan bodies in monocytes of Giemsa stained tissue smear





Granuloma inguinale

Treatment



- Doxycycline 100 mg orally BID for at least 3 weeks
- TMP-SMX one double-strength tablet (800mg/160 mg) orally BID for at least 3 weeks
- Alternates: Azithromycin 1 g orally once per week for at least 3 weeks
- Ciprofloxacin 750 mg orally twice a day for at least 3 weeks
- Erythromycin base 500 mg orally four times a day for at least 3 weeks

Lymphogranuloma Venereum

- *Chlamydia trachomatis*
- Self-limited genital ulcer
- Tender inguinal and/or femoral lymphadenopathy (usually unilateral)
 - Groove sign, suppuration, scarring
 - PID
- Proctocolitis (fistulas & strictures)
- Non-gonococcal urethritis



LGV: Diagnosis

- Serology, DNA tests, Urethral swab



LGV Treatment

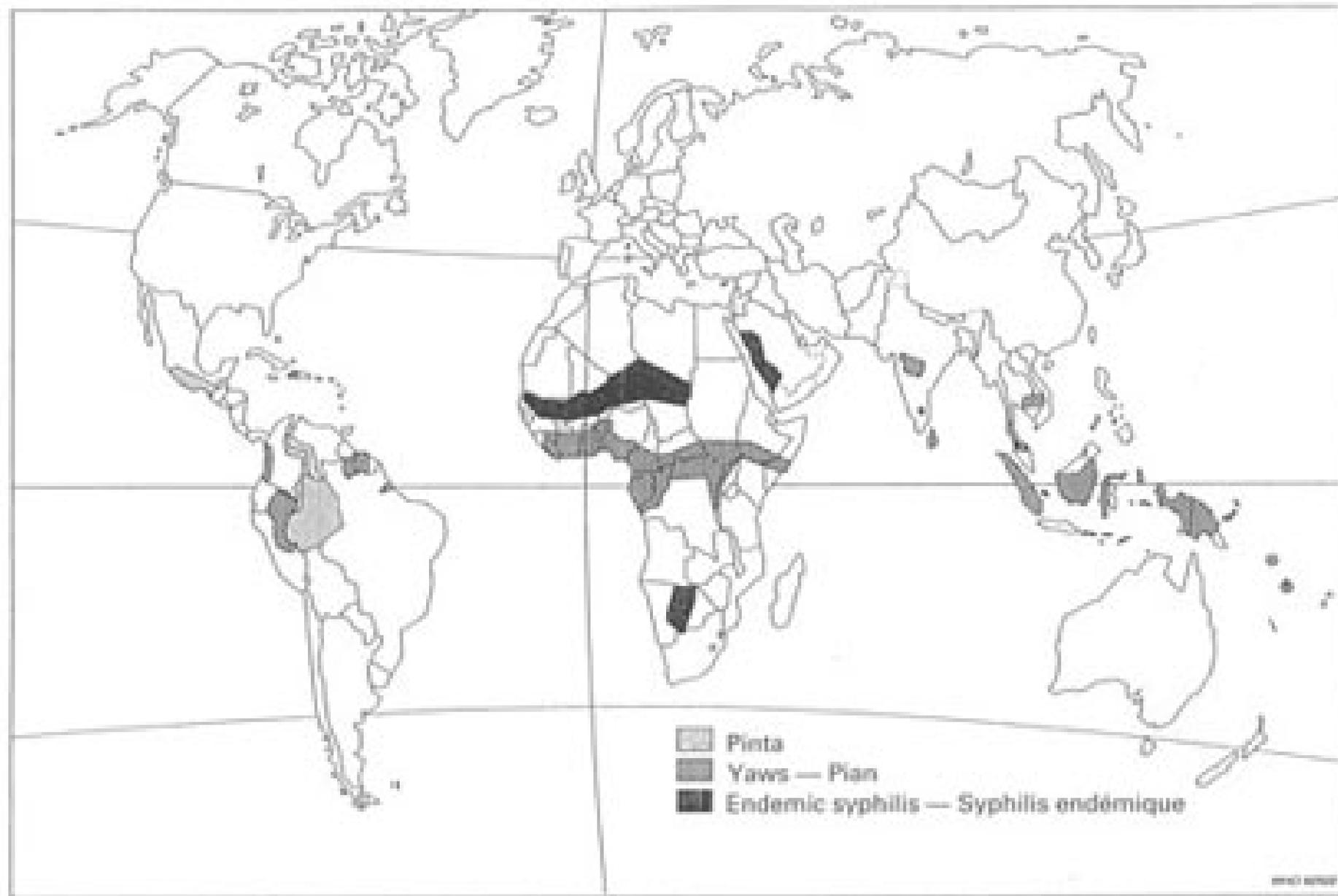
- **RECOMMENDED:** Doxycycline 100 mg orally BID for 21 days
- **ALTERNATIVE:** Erythromycin base 500 mg orally QID for 21 days*
- Aspiration of suppurative buboes may be needed



Nonvenereal Treponemes

- Children
- Related to poverty and lack of health services
- Person to person contact or sharing drinking vessel
- Diagnosis: clinical, dark-field microscopy and serologic testing
- **Treatment: Benzathine PCN intramuscularly**
If PCN allergic: TCN 500 mg qid x 15 days,
Children Erythromycin 8 to 10 mg/kg qid x 15 days

MAP 1. GEOGRAPHICAL DISTRIBUTION OF THE ENDEMIC TREPONEMATOSES IN THE EARLY 1960s
CARTE 1. RÉPARTITION GÉOGRAPHIQUE DES TRÉPONÉMATOSES ENDÉMIQUES AU DÉBUT DES ANNÉES 60



Yaws

T. pallidum pertenue

Frambesia, Bouba

Disabling course

Skin, bone, joints

Hot, humid coastal plains



Early & Late Yaws

- Mother yaw- primary crusted papule
- Secondary yaws- sm lesions, clear centrally, coalesce peripherally
- Painful osteoperiostitis/polydactylitis (saber shin deformity of tibia)
- Late yaws- indolent ulcers with clean cut borders, only 10%
- Gangosa- destruction of palate and nasal bone



Bejel (Endemic Syphilis)

- *T. pallidum endemicum*
- Dry, arid areas of Middle East/Africa
- Mouth sore initial presentation, then oral patches, laryngitis, angular cheilitis
- Cutaneous lesions uncommon
- Destructive lesions in long bones, esp legs



Pinta (Carate)



- Central & South America
- *T carateum*
- Only skin lesions
- Primary- red papule on legs, face, arms
- Secondary- sm, scaling papules initially red turning dark slate blue
- Late Dyschromic Stage- white mottled appearance

Infestations and Cutaneous Ectoparasites

- Lice
- Scabies
- Tungiasis
- Cutaneous larva migrans
- Myiasis
- Cercarial Dermatitis

Head lice



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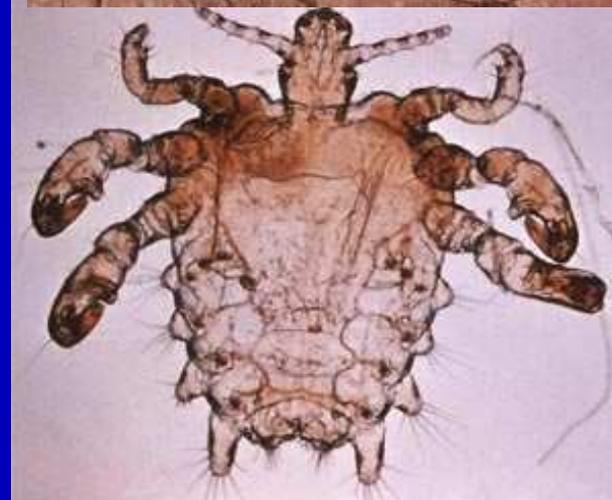


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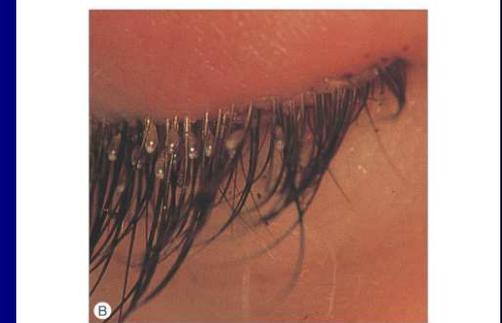
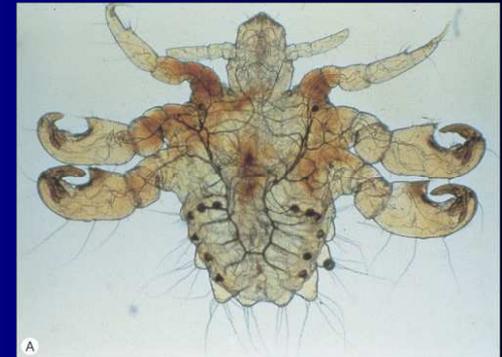
Pediculosis pubis (crab lice)

- Louse grabs hairs, bites skin, cements nits to hairs
 - Can be on any body hair, including eyelashes
- Look for other STD's



Pediculosis pubis

- Permethrin cream
- Coat eyelashes with vaseline bid



Scabies

- Itching often worse at night
- Close contacts also itchy
- Papules and burrows: **w**ebs, **w**rists, **w**aist and **w**illie



Scabies



Scabies mite burrows in epidermis

- Scrape to see mite, eggs, or poop

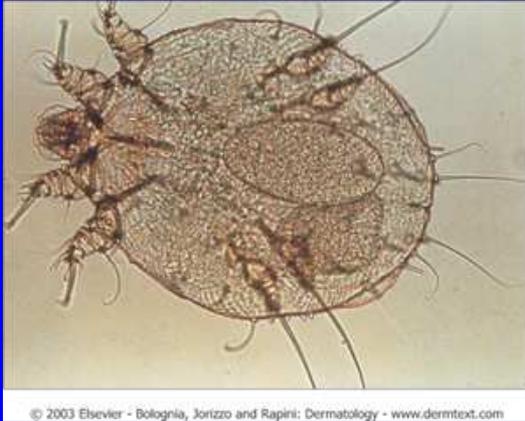


Crusted scabies

- Wear gloves!



Scabies



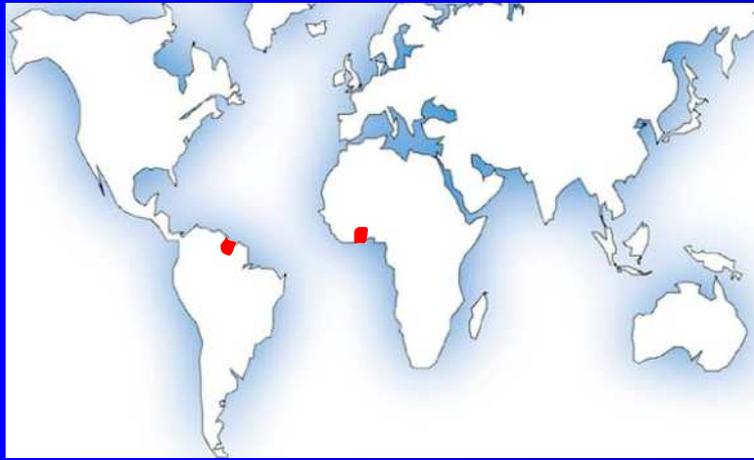
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- *Sarcoptes scabies*
- Treatments –
permethrin,
lindane, benzyl
benzoate,
crotamiton,
malathion, topical
sulfur, ivermectin



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21yo soldier returns military exercise in Guyana



Tungiasis, Sand Flea (*Tunga penetrans*)

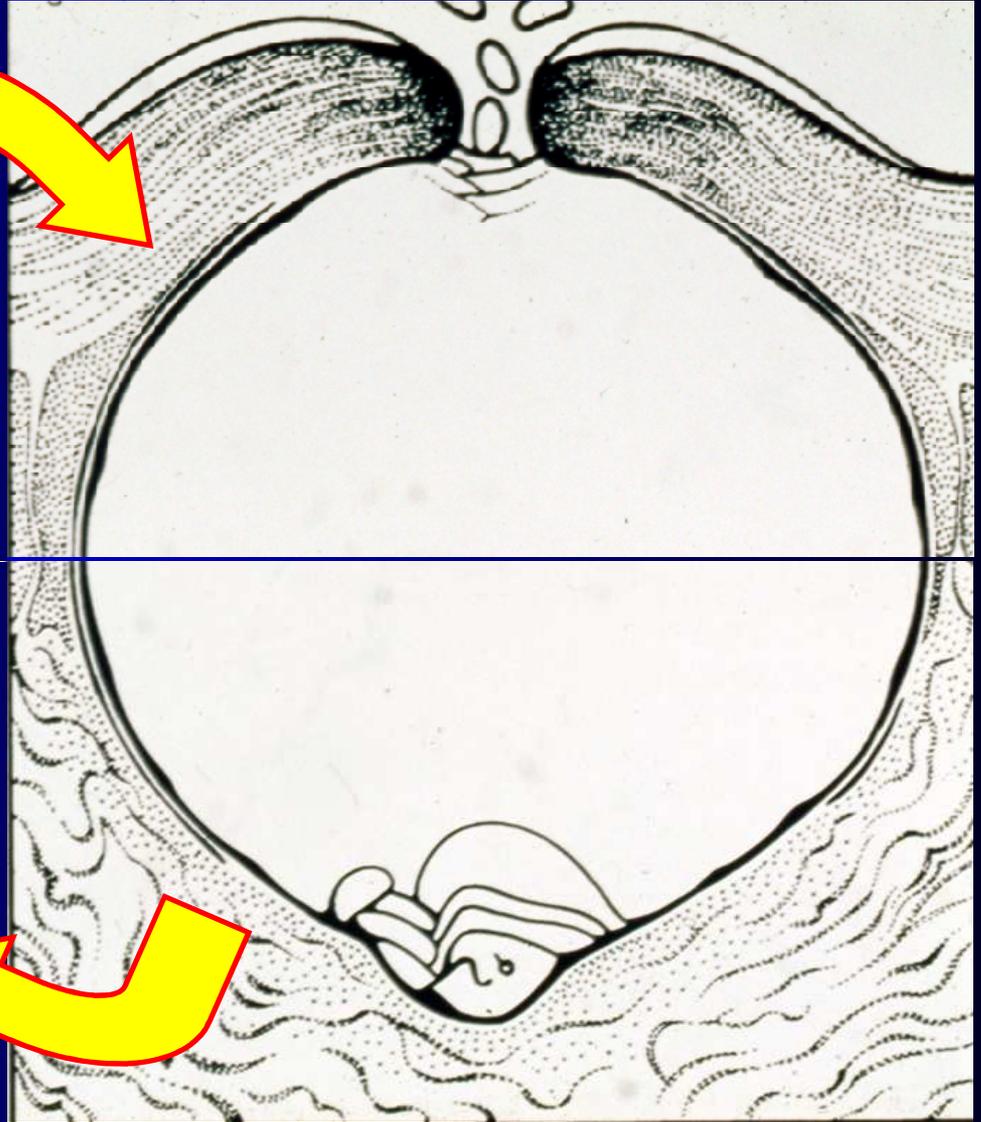
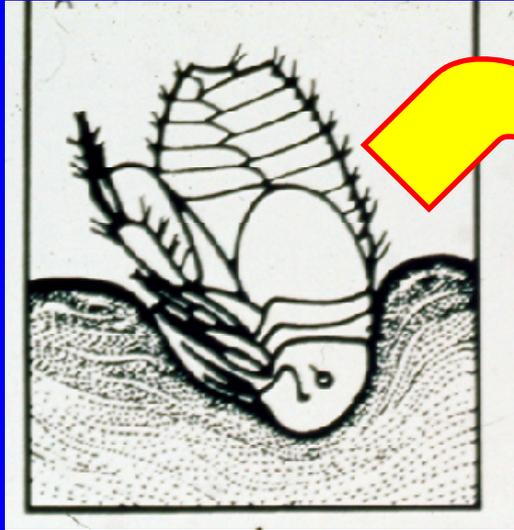
- Female burrows into skin (usually foot)
- Progression of painful red spot to papule to nodule with black dot (anal/genital area of flea) to pearl-like papule (with eggs) to black keratotic crust



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Gravid female burrows into flesh, leaving uterine pore open.



Tungiasis

Tungiasis



- Life cycle of 2-4 mm flea is 5-6 weeks
- Infestation self-limited if not reinfected
- Rare osteomyelitis/gangrene
- Sub-Saharan, Caribe, Mexico, S. America
- Surgical removal of fleas

Tungiasis

- *Tunga penetrans*, Sand flea, jigger
- Painful
- Curettage or Excision, Topical ivermectin or thiabendazole, Oral thiabendazole for heavily infested

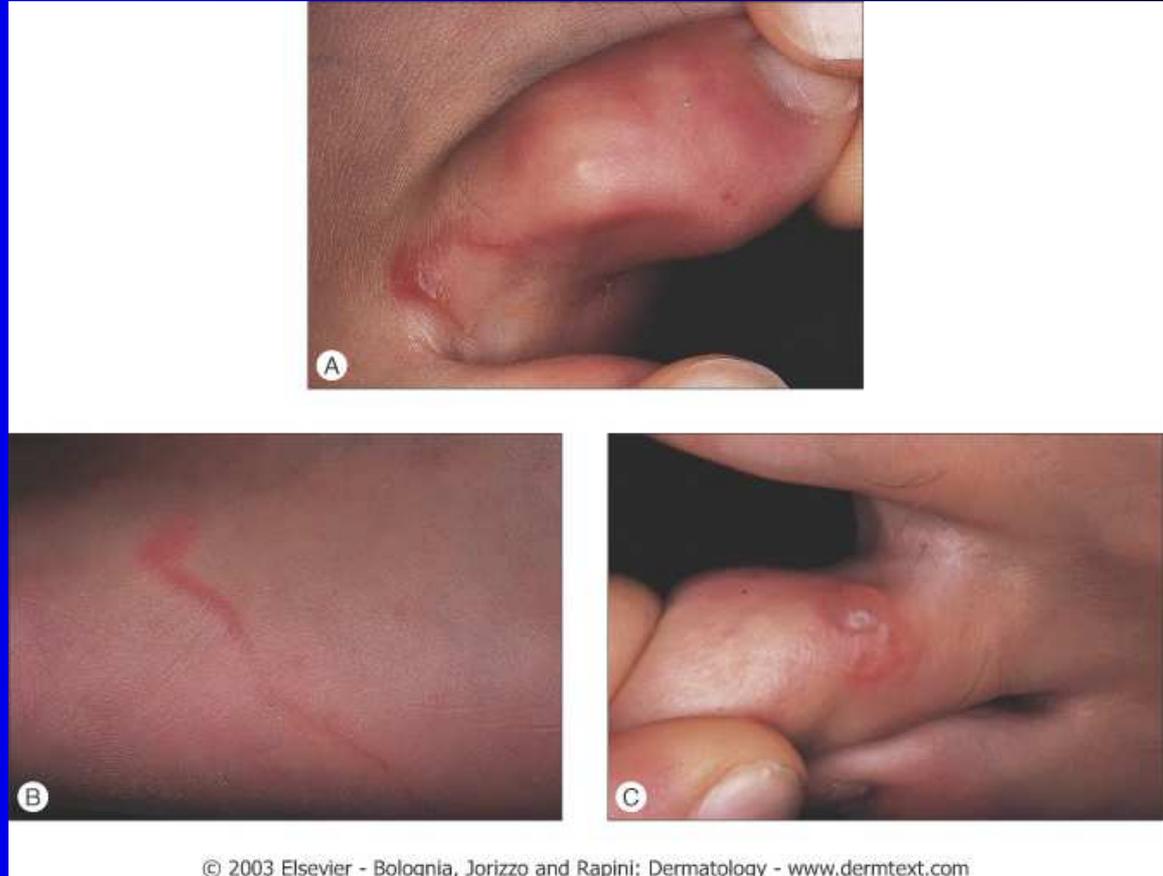


**28yo Navy physician –
at Flight Surgeon Course in Pensacola**



Cutaneous Larva Migrans (Creeping eruption)

- Pruritic, serpiginous lesion migrates 2-4 cm /day on feet or buttocks



Creeping Eruption (Cutaneous Larva Migrans)



- Dog or cat hookworm larvae
- Beach; sandboxes
- Unlike human hookworms, dog/cat hookworms cannot penetrate fully and usually die within 2 months
- Larva migrates ~ 2 cm/day
- Course: self-limited 1-6 mos
- Rx: topical thiabendazole
or single dose of oral ivermectin



Myiasis

- Infestation of human tissue by fly larva



Myiasis



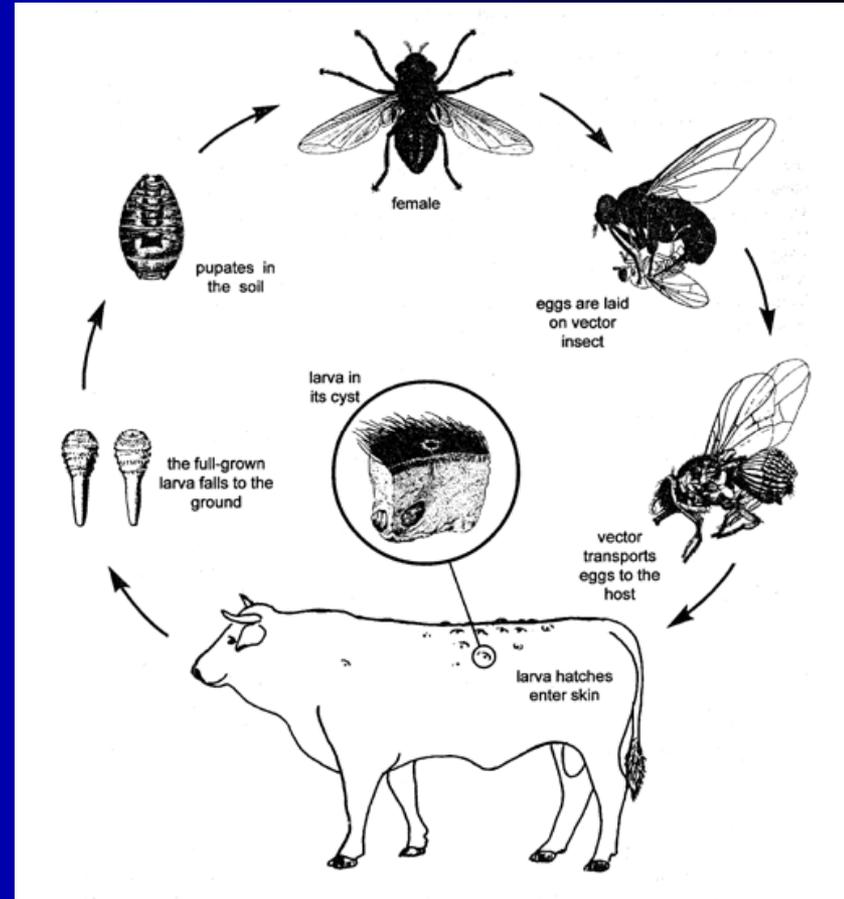
- Painful, boil-like lesion with central punctum (respiratory pore)
- Exposed skin
- “obnoxious infestations both medically and esthetically”

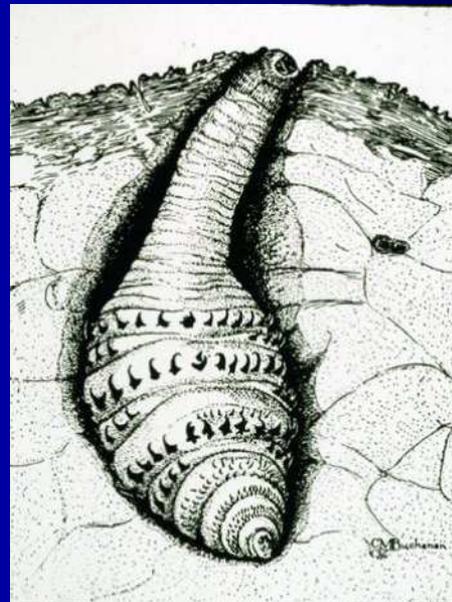


New World Myiasis



Dermatobia hominis
Human Botfly
Female glues eggs to
mosquito, stablefly, or tick





Old World Myiasis

Fly deposits eggs on ground
or clothing

Young maggots penetrate skin

African tumbu fly

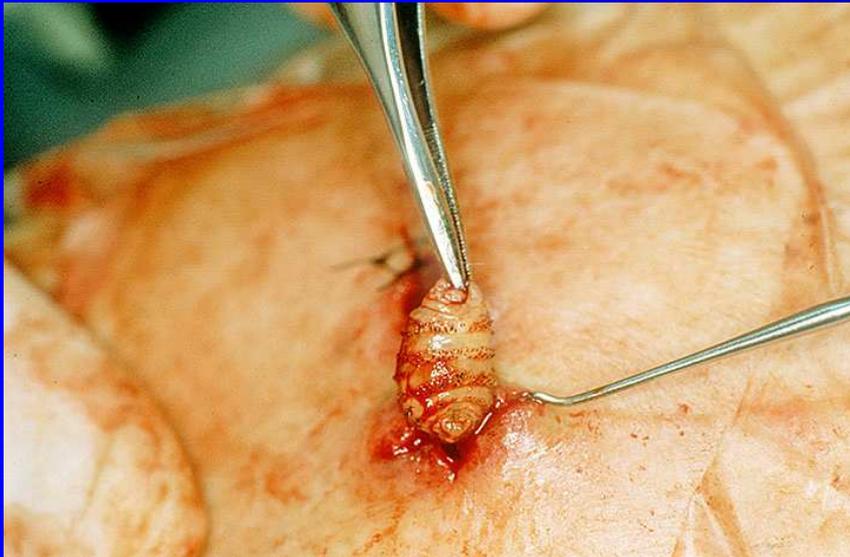
Mango fly

Mputsi fly



Cordylobia anthropaga

Larval Stage of Tumbu or Bot Fly (Africa, Latin America)



Cercarial Dermatitis (Swimmer's itch)



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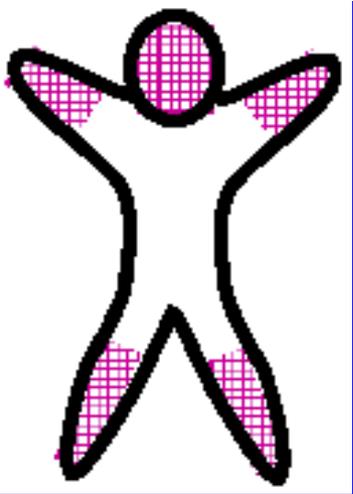
- Transient pruritic papular or urticarial eruption on exposed skin
- Resolves in 7-10 days after fresh water snail exposures (schistosomal larvae penetrate the skin)

A potpourri of interesting
diseases (as time allows)

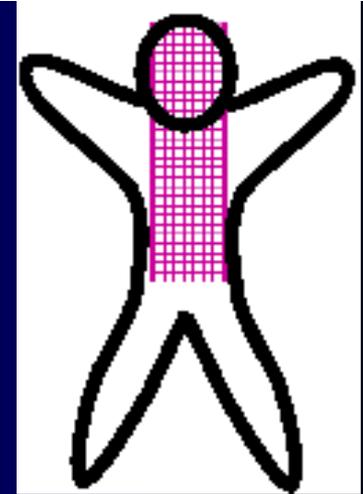
Varicella







Variola vs. Varicella



	Variola	Varicella
Incubation	10-14 days	14-21 days
Prodrome	Severe	Minimal
Distribution	Centrifugal, Convex	Centripetal, Concave
Evolution	Synchronous	Asynchronous
Crust forms	10-14 days	4-7 days
Crust detaches	14-28 days	<14 days
Infective until	Eschars detach	Lesions crust

Cutaneous Anthrax

Clinical Progression

- Painless, pruritic papule
- Juicy papule
- Bulla (48 hours)
- Bulla ruptures/early ulcer
- Eschar with raised border
- ‘Jet black’ eschar
- Minimal scarring



Orf



- Ecthyma contagiosum
- Acquired from direct contact with lambs, calves, or goats
- Spontaneous resolution

Bubonic Plague

- Rural central and south Africa, central Asia, S America, SW USA
- Sudden onset flu-like syndrome
- Painful, swollen, tender lymph nodes (Buboes)
- IV Streptomycin



Measles (Rubeola)

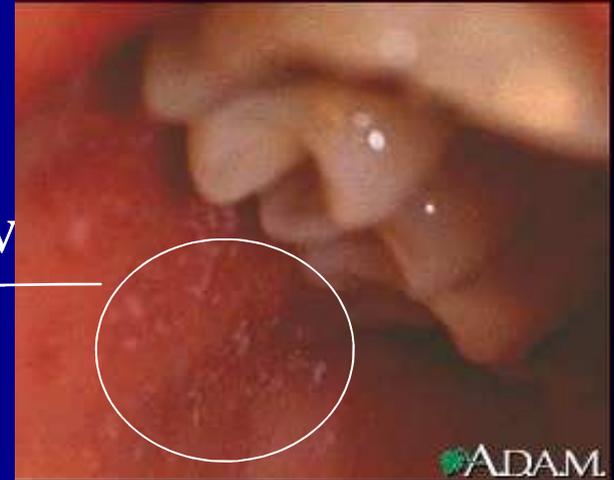
- Rarely seen among vaccinated
- Major killer in developing world
- Spread by respiratory route
- Incubation 9-12 days
- Immunization highly effective



Measles

- Prodrome: high fever, malaise, URI
- Rash begins in hairline of neck/face, then moves down
- Exudative conjunctivitis
- Photophobia
- Severe bark-like cough
- Koplik's spots on buccal mucosa

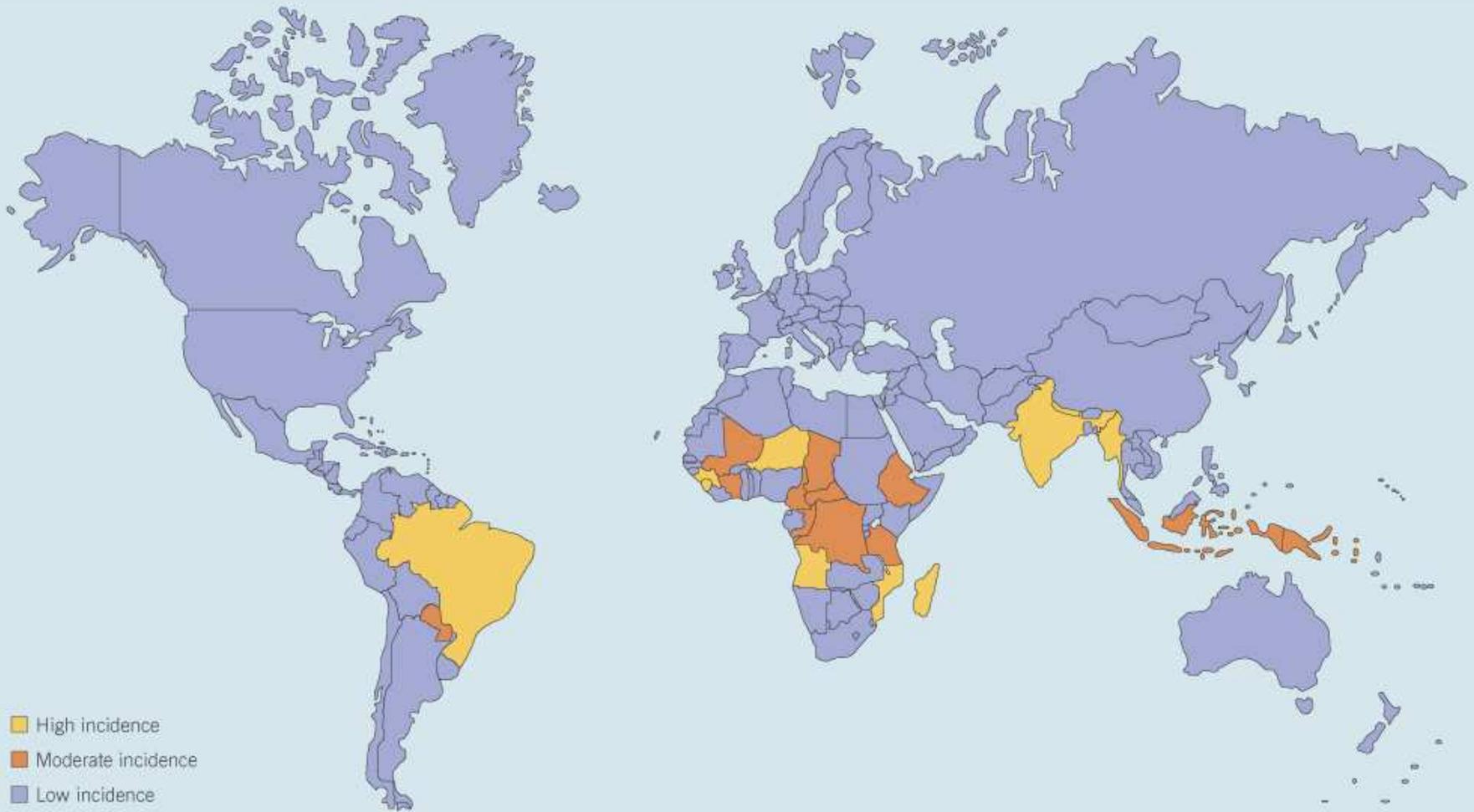
- Cough, coryza, conjunctivitis, rash, & fever



Leprosy/Hansen's Disease

- Chronic disease caused by *M. leprae*
- Peripheral nerve (sensory loss), skin, and upper airway mucosal involvement
- Asia, Caribbean, the Americas, S. Europe, Australia, Africa
- Incubation period 3 mos to 40 years
- Rifampin, Dapsone, Clofazimine

LEPROSY SITUATION IN 2000



Sensory



Motor



Auto-amputation



Claw-hand deformity

Leprosy

Mycobacterium leprae

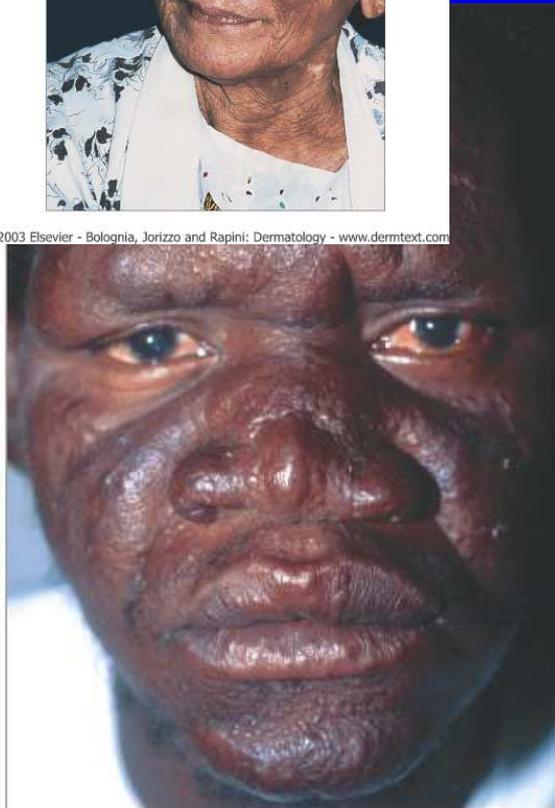


Lepromatous leprosy

Lepromatous Leprosy



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- Nodular infiltrations can destroy underlying structures (saddle nose deformity, leonine facies)
- Sensory loss over distal limbs

Borderline Leprosy



- Numerous lesions, annular
- Symmetrical nerve involvement appears later

Tuberculoid leprosy



- Hypopigmented saucer shaped single (max 2-3)
- Numbness, pain, tingling, muscle weakness

Mycobacterium tuberculosis

- Inoculation from exogenous source (primary inoculation TB, Tuberculosis cutis verrucosa)
- Endogenous cutaneous spread (Scrofuloderma, tuberculosis cutis oroficialis)
- Hematogenous spread (Miliary TB, Lupus vulgaris)
- Tuberculids (erythema induratum)



Scrofuloderma



- Tuberculous involvement of the skin by direct extension from underlying lymphadenitis

Skin lesions in returned travellers (n=4742)

- Cut. larva migrans 9.8%
- Insect bite 8.2%
- Skin abscess 7.7%
- Infected insect bite 6.8%
- Allergic rash 5.5%
- Rash, Unknown 5.5%
- Dog bite 4.3%
- Superficial fungal 4.0%
- Dengue 3.4%
- Leishmaniasis 3.3%
- Myiasis 2.7%
- Spotted fever 1.5%
- Scabies 1.5%

Int J Infect Dis 2008; 12(6)593-602

Review

- Historical context of skin diseases
- The dermatologic evaluation and lexicon
- Common conditions in global dermatology
- Mycoses (superficial and deep)
- Genital ulcer diseases / Treponemal infections
- Infestations and ectoparasites
- A potpourri of interesting diseases (as time allows)

Thanks

boris.lushniak@hhs.gov



The United States Public Health Service

- Who we are
- What we do
- Collaborative activities
- Opportunities



Seven Uniformed Services of the United States

DOD
Armed
Military



Non-DOD
Armed
Military



(DHS)

Non-DOD
Non-Armed
Can Be Militarized



(HHS)



(DOC)

The Mission of the Commissioned Corps

**Protecting, promoting, and advancing
the health and safety of the nation**



US Public Health Service Mission

As America's uniformed service of public health professionals, the Commissioned Corps achieves this mission through:

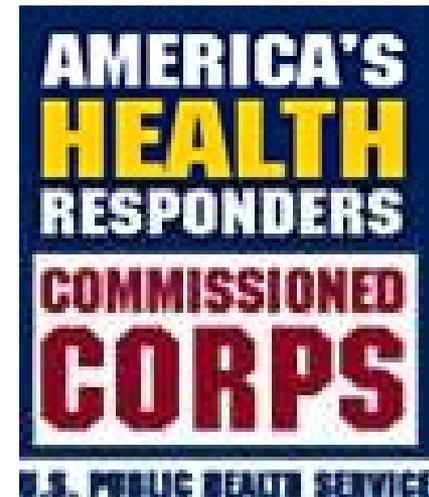
- Leadership and excellence in public health practice
- The advancement of public health science
- Rapid and effective response to public health needs

The United States Public Health Service

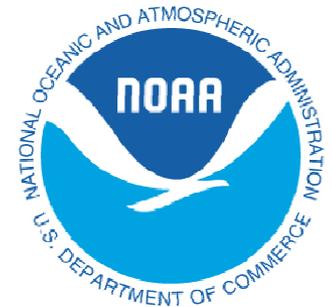
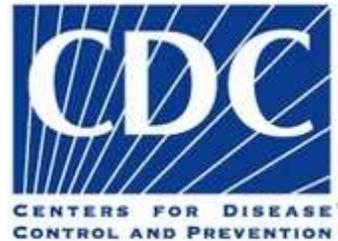
- 1798** Act provided care for sick and injured merchant seamen (loose hospital network)
- 1870 Marine Hospital Service (national system)
- 1871 Supervising Surgeon (later Surgeon General)
Dr. John Maynard Woodworth
- 1878 Quarantine functions (smallpox, yellow fever, cholera)
- 1889** Legislation creating Commissioned Corps
- 1891 Immigrant services
- 1902 Public Health and Marine Hospital Service
- 1912 Public Health Service (with broadened powers)

Categories of Commissioned Corps Officers

- Over 6,500 officers in 800 locations, worldwide
- 11 Professional Categories
 - Medical
 - Dental
 - Nursing
 - Pharmacy
 - Scientist
 - Health Services
 - Engineer
 - Therapist
 - Veterinarian
 - Dietitian
 - Environmental Health



Federal Agencies Utilizing Commissioned Corps Officers



(Not all agencies and programs are represented)